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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/508,773

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Hiroshi Fujii

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10/06/2006

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EXAMINER

REESE, DAVID C

ART UNIT

PAPER NUMBER

3677

DATE MAILED: 10/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/508,773

Applicant(s)

FUJII ET AL.

Examiner

David C. Reese

Art Unit

3677

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 July 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3,10,11,17 and 18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3,10,11,17 and 18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 7/5/2006 has been entered. Consequently, the following is the current listing of claims in the instant application:

Status of Claims

- Claims 4-9, 12-16, and 19 are canceled.
- Claims 1-3 and 10-11 were amended.
- Claims 1-3, 10-11, and 17-18 are pending.

Claim Objections

[1] Claim(s) 2 were previously objected to because of informalities. Applicant has successfully addressed these issues in the amendment filed on 7/5/2006. Accordingly, the objection(s) to the claim(s) 2 have been withdrawn.

However, as amended:

[2] Claim 1 is objected to because of the following informalities: minor grammatical issues; in the second to last line (alternately') should be (alternately,).

Also, in Claims 2 and 10, "zero degree" should be "zero degrees."

[2] Lines 8-9 of Claim 1 recite the limitations "the lead angle is mild," and "the lead angle is steep". The terms above are in reference to the multi-pitch nut and not the multi-pitch screw and

Art Unit: 3677

the claim therefore lacks sufficient antecedent basis for these limitations in the claim. "The" should be substituted with "a." Appropriate correction is required.

Per the discussion above, other claims have insufficient antecedent basis issues: in Claim 3, "a mild lead angle" should be "the mild lead angle." "a steep lead angle" should be "the steep lead angle." In Claim 10, "a multi-pitch screw and a multi-pitch nut" should be "the multi-pitch screw and the multi-pitch nut." In Claim 11, "a multi-pitch screw and a multi-pitch nut" should be "the multi-pitch screw and the multi-pitch nut." "a mild lead angle" should be "the mild lead angle." And lastly, in claims 17 and 18, "a multi-pitch screw and a multi-pitch nut" should be "the multi-pitch screw and the multi-pitch nut."

Further, Claim 3 and 11 recite the limitations "the direct contacts" and "the flat sections" in the instant claims and dependent ones therefrom. There is insufficient antecedent basis for these limitations in the claims.

Claim Rejections - 35 USC § 112

[3] Applicant has addressed all rejections under 35 USC § 112 to the Claims in the amendment filed 7/15/2006. Accordingly, the Examiner has withdrawn the 35 USC § 112 rejections.

However, as amended:

[4] Claims 3 and 11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In the instant case, the claims recite "by engaging and disengaging the direct contacts of the flat sections..." This statement is indefinite as it fails to properly delineate

Art Unit: 3677

what exactly is being engaged/disengaged by the lead angles of the male screw (claim 3) and female screw (claim 11).

Claim Rejections - 35 USC § 102

[5] The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

[6] Claims 1-2, 10, and 17-18 are rejected under 35 U.S.C. 102(b) as clearly anticipated by Pearson, US- 113,557, because the invention was patented or described in a printed publication in this or a foreign country, or in public use or on sale in this country more than one (1) year prior to the application for patent in the United States.

The shape and appearance of Pearson is identical in all material respects to that of the claimed design, *Hupp v. Siroflex of America Inc.*, 122 F.3d 1456, 43 USPQ2d 1887 (Fed. Cir. 1997).

As for Claim 1, Pearson teaches of a combination of a multi-pitch screw (Fig. 1) and a multi-pitch nut (Fig. 4) said multi-pitch screw (Fig. 1) comprising a thread of a male screw (Fig. 1) is formed such that sections having a mild lead angle (downward angle) and sections having a steep lead angle (upward angle) are arranged alternately, continuously (the downward and upward angles are indeed arranged alternately and continuously as one can notice from Fig. 1)

Art Unit: 3677

and stepwisely during a single turn along a spiral line, said multi-pitch nut (Fig. 4) comprising a thread of a female screw formed such that a section in which the lead angle (downward angle) is mild and a section in which the lead angle is steep (upward angle) are arranged alternately, continuously (the downward and upward angles are indeed arranged alternately and continuously as one can notice from Fig. 1) and stepwisely during a single turn along the spiral line.

Re: Claim 2, wherein the lead angle of said section having a mild lead angle (downward angle) of the male screw (Fig. 1) is zero degree, which forms a flat step of thread (Since applicant has not given a reference point for the term “zero degree”, in the most reasonable interpretation possible, the mild lead angle of Pearson can be considered at zero degrees, forming a flat step of thread).

Re: Claim 10, wherein the lead angle of said sections of said female screw (Fig. 1) in which said lead angle is mild is zero degree, which forms a flat step of thread (Since applicant has not given a reference point for the term “zero degree”, in the most reasonable interpretation possible, the mild lead angle of Pearson can be considered at zero degrees, forming a flat step of thread).

Re: Claim 17, a feed screw device (combination of Figs. 1 and 4) comprising said combination of a multi-pitch screw (Fig. 1) and a multi-pitch nut (Fig. 4).

Re: Claim 18, a screw fastener mechanism (combination of Figs. 1 and 4) comprising said combination of a multi-pitch screw (Fig. 1) and a multi-pitch nut (Fig. 4).

Response to Arguments

[7] Applicant's arguments filed 7/5/2006 regarding rejections under 35 U.S.C. 102 have been fully considered but they are not persuasive. Applicant amended claim 1 attempting to

Art Unit: 3677

emphasize that the thread line of the present invention is free of downward angles. Such amendment involved the use of the term, "stepwisely". The examiner disagrees that such an amendment emphasizes that the thread line of the present invention is free of downward angles. As such, the prior art of Pearson is still maintained by the examiner as being anticipatory towards the present application. Applicant is reminded that claims in a pending application should be given their broadest reasonable interpretation. *In re Pearson*, 181 USPQ 641 (CCPA 1974). And in the instant case, the term, "stepwise" is not inferred by examiner as solely meaning an continuous upwardly or downwardly line. Rather the term "stepwisely" could also mean one up (one step up), one down (one step down), and so forth. Such a term is not considered limiting by the examiner in the instant case.

Also, applicant amended claims 2 and 10 further introducing the "zero degree" language. Though examiner is aware of what the applicant is attempting to claim, as described above, in the broadest reasonable interpretation possible; without a reference angle for the "zero angle," the examiner can designate any angle and label it as having a "zero angle."

Art Unit: 3677

Conclusion

[8] THIS ACTION IS NON-FINAL

[9] The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The following patents are cited further to show the state of the art with respect to this particular type of fastener; as well as their extreme relevance to the current application as many read extensively onto the claimed invention: please see submitted notice of reference cited.

[10] Any inquiry concerning this communication or earlier communications from the examiner should be directed to David C. Reese whose telephone number is (571) 272-7082. The examiner can normally be reached on 7:30 am-6:00 pm Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, J.J. Swann can be reached at (571) 272-7075. The fax number for the organization where this application or proceeding is assigned is the following: (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DCR



9/28/06

David Reese
Assistant Examiner
Art Unit 3677



Katherine Mitchell
Primary Examiner